3/31/09

Ms. Wendy S. Wyels,
Chief, Compliance and Enforcement Section
Ms. Sue McConnell, Senior WRCE
Regional Water Quality Control Board
Central Valley Region
VIA: Electronic Submission
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

RE: Draft Cleanup and Abatement Order for El Dorado County Department of Transportation, Rubicon Trail, El Dorado County

Dear Ms. Wyels and Ms. McConnell:

Thank you for the opportunity to comment on this very important matter, the Draft CAO affecting the Rubicon, the most famous OHV road in the world.

I am a member of Friends of the Rubicon, and a regular volunteer on the Rubicon. I drive a stock, street legal SUV on the Rubicon, and enjoy it immensely. I drive there rear-round, and especially enjoy the time I spend in the winter, when the beauty of the area is magnified by the high Sierra snowfall.

I would like to respond to some of the points brought up by stakeholders with concerns about the Rubicon. It occurred to me that with so many bodies of water located in a Municipal Utility district, that assuredly the Utility Provider would have water quality testing data available. They did!

Below are testing and Water Quality Reports from the SMUD FERC relicensing project. Amazingly, it provides much of the data, studies, sampling and results that will assist the board in making a decision. It will also help some concerned stakeholders see that there is an official entity that regularly tests and samples the "Waters of the State" directly surrounding the Rubicon , and that it is not polluting the "Waters of the State".

> Pacific Gas and Electric Company Chili Bar Project Upper FERC Project No. 2155 and Sacramento Municipal Utility District American River Project FERC Project No. 2101, 2003-2005 available on the internet: http://www.eurekasw.com/sites/SMUD_Relicensing/docs/reports/waterquality/WaterQuality.pdf
>
> > Study Area
> >
> > As described above, the study area included all reservoirs associated with the Projects excluding Robbs Peak Reservoir. Rockbound Lake, although associated with the UARP, is not a UARP project feature nor within the FERC-defined UARP Project Boundary. Robbs Peak Reservoir was excluded from sampling due to its small size (30 acre-feet). The reservoirs in the study area included:
> >
> > Rubicon, Gerle Creek, Camino, Rockbound, Ice House, Brush Creek, Buck Island, Union Valley Slab Creek, Loon Lake, Junction and Chili Bar
> >
> > In addition, the study area included all stream reaches and those tributary inflows that were identified by the Aquatic TWG and Plenary Group. These stream reaches are listed below:
> >
> > Rubicon Dam, Robbs Peak Dam, Camino Dam, Buck Island Dam, Ice House Dam, Brush Creek Dam Loon Lake Dam, Union Valley Dam, Slab Creek Dam, Gerle Creek Dam, Junction Dam Reach Downstream of Chili Bar

Reservoirs

In general, waters in the 12 reservoirs are soft with hardness readings ranging from less than 1 to about 15 mg/l, and total alkalinity levels ranging from about 1 to 14 mg/l, indicating a low buffer capacity to changes in pH. **The water is low in total suspended and dissolved solids** (TSS/TDS); generally less than 4 mg/l and 20 mg/l, respectively. **Mineral levels are low**. **All organic compounds (oil and grease, methyl-t-butyl ether [MTBE], total petroleum hydrocarbons [TPH], and gasoline range organics) are below detection limits.** Based on Secchi disk depth, total nitrogen and total phosphorus readings, the reservoirs range in trophic status from mesotrophic (represented best by Chili Bar Reservoir) to oligotrophic (represented best by Junction Reservoir). The maximum nitrate concentration in each reservoir is well below the 1.0-mg/l nitrate standard typically used to characterize waters that can stimulate algal growth. The Licensees are unaware of any reports of floating material that would affect designated beneficial uses. All of the 12 reservoirs are generally well oxygenated. Dissolved oxygen (DO) concentrations in the upper portions of the reservoir in summer are typically greater than 85% saturation and 8.0 milligrams per liter (mg/l). None of the reservoirs showed bottom anoxic conditions, although lower DO concentrations (less than about 3 mg/l and 30% saturation) were found at the bottom of Ice House, Union Valley and Brush Creek reservoirs. The water is basic to slightly alkaline with pH readings ranging from about 6.0 to 8.0. Specific conductance showed an increasing trend from upstream reservoirs (readings ranging from about 6 to 13 µS/cm) to the downstream reservoirs (20 to 37 µS/cm), indicating increasing ion concentration from the upper to lower elevation reservoirs. Water in the reservoirs is relatively clear, with Secchi disk readings from about 10 to 30 feet.

Fecal Coliform and E. *coli* Sampling and Results

The Licensees are unaware of any historical data for fecal coliform sampling. The Licensees did, however, obtain historical bacteria data from El Dorado County for ***E. coli*** during the 5-year period of August 1997 to September 2002. These historical ***E. coli*** data are presented later in this section along with the results of sampling by the Licensees for ***E. coli***. The Licensees collected 5 fecal coliform samples within a 30-day period at 21 different locations in 2003, for a total of 105 samples. All of the Licensee's 2003 fecal coliform samples were taken from June 23 through July 22, 2003, except at four sites. At Buck Island Reservoir (1 site), Loon Lake Reservoir (2 sites) and in Loon Lake Dam Reach below the dam (1 site), five samples were taken from August 19 through September 23, 2003. Table 4.3.1-1 summarizes the results of this sampling effort by location and includes a list of fecal coliform values that were equal to or greater than the Basin Plan 10 percent criterion (since five samples were taken at each site, an exceedence of the 400/100 ml criterion in any one sample was considered an exceedence of the 10 percent criterion). Note that for the purpose of calculating the geometric mean of the five samples, a value of one was assumed where the value was less than the reporting limit of one organism/100 ml.

I should note here that in the FERC document it mentions that Spider lake was closed by El Dorado County. I am aware that the actual water sampling was taken at the time of the closure, and again, fecal coliform and E.*coli* levels in the samples were well below the Agency's standard. Hind sight is of course 20/20, but the closure of Spider Lake was not needed for human health reasons, it was purely political.

Table 4.3.1-1. Range of fecal coliform in UARP reservoirs and reaches and in the Reach Downstream of Chili Bar based on five samples collected during a 30-day period in summer 2003. The sampling period included samples on either the Independence Day or Labor Day weekends.					
Location	**Site**	**Number of Samples**	**Range (#/100 ml)**	**Geometric Mean (#/100 ml)**	**Samples in Excess of 10% / 400/100 ml Criterion (#/100 ml)**
RESERVOIRS					
Buck Island	Buck Island near Dam, dispersed campsite	5	2-27	7	None
Loon Lake	Loon Lake Reservoir at Ellis Creek Inflow on west side of creek	5	<1-24	5	None
	Loon Lake Res. near Northshore Campground near dam and in dispersed recreation area	5	2-40	7	None
Gerle Creek	Gerle Ck. Res. between dock and day-use area	5	<1-350	10	None

Table 4.3.1-1. Range of fecal coliform in UARP reservoirs and reaches and in the Reach Downstream of Chili Bar based on five samples collected during a 30-day period in summer 2003. The sampling period included samples on either the Independence Day or Labor Day weekends.					
REACHES					
Gerle Creek	Gerle Creek below Loon Lake gaging station at USFS property boundary.	5	<1 – 26	7	None
Upstream of Junction	Jones Fork Silver Creek at Ice House Road	5	165 – 1,500	468	730 (6/23) 400 (7/15) 1,500 (7/22)
	Big Silver Creek at Bike Bridge	5	37 – 1,160	133	1,160 (7/22)
Camino Dam	SFAR below Bridge at Camino Powerhouse	5	<1 – 44	8	None

Of the 105 fecal coliform samples collected during a 30-day period, 86 samples contained less than the Basin Plan Bacteria Water Quality Objective requiring that no more than ten percent of the total number of samples taken during the 30-day period may exceed 400 organisms/100 ml (82% of the samples). Of the remaining 19 samples, five samples (4.8%) were in a UARP–affected reservoir, four samples (3.8%) were in non-UARP affected reaches, and 10 samples (9.5%) were in the Reach Downstream of Chili Bar, as described below.

Sediment

The Basin Plan contains one Water Quality Objective for sediment, which states:

The suspended sediment load and suspended sediment discharge of surface waters shall not be altered in such a manner as to cause a nuisance or adversely affect beneficial uses.

In 2002 and 2003, the Licensees collected 208 water quality samples from the UARP reservoirs and reaches and the Chili Bar Reservoir and Reach Downstream of Chili Bar and measured the concentrations of total suspended sediment (TSS) in each of these. In addition, the Licensees recorded Secchi depth readings in the UARP reservoirs and the Chili Bar Reservoir. These data are presented in Table 4.3.2-4.

Table 4.3.2-4. Range of Total Suspended Sediment (TSS) values in UARP reservoirs and reaches and in Chili Bar Reservoir and the Reach Downstream of Chili Bar based on sampling during 2002 Fall Turnover and First Major Rain events and 2003 Spring Runoff and Summer Low Flow events.		
Location	Number of Samples	Range of Total Suspended Sediment Values mg/l
RESERVOIRS		
Rubicon	3	<1-2
Rockbound	4	<1
Buck Island	3	<1
Loon Lake	14	<1
Gerle Creek	4	<1
Union Valley	15	<1-2
Ice House	23	<1-4
Junction	3	<1-2
Camino	3	<1
Brush Creek	3	<1
Slab Creek	7	<1-2
Chili Bar	9	<1-4
REACHES		
Upper Elevation	36	<1-4,18[1]
Middle Elevation	45	<1-6
Lower Elevation	23	<1-2
Reach Downstream of Chili Bar	13	<1-6

[1] Value is above the typical range for the parameter

In complete testing done for FERC's relicensing, SMUD completed an exhaustive testing regime that showed all concerns surrounding the Rubicon trail to be within CVWQCB's standards. And in most cases, concerns of both oil and grease entering the water supply were non existent. Likewise, Fecal Coliform and e-coli testing showed similar results. None of these listed concerns from the Agency's assessment were located in excess of the Agency's own standards.

The data seems self explanatory. What the SMUD testing has shown unequivocally, that as some "stakeholders" complain the "worst" times of the Rubicon was 2003-2005, then, even in those "times", there was no obvious contamination to the "Waters Of the State".

Unfortunately, the "visual inspections" may have been tainted by the imagination and dramatization of others. And, to someone who has not been to the Rubicon regularly, or in a primitive camping/ back country experience regularly, finding toilet paper near the trail, or finding human feces off the trail may seem aesthetically offensive, but in fact is found regularly throughout the Sierras, it is found throughout the United States, on any trail, be it motorized or non-motorized.

I could take you to portions of the Pacific Crest Trail, where you will find exactly the same thing. It is not simply a Rubicon problem, or a motorized use problem. It is a potential problem, that we (FOTR) are pro actively addressing through education efforts.

The truth is, while humans do use the forest to relieve themselves, as the bears and bunnies do, it does not regularly effect water quality that would exceed state standards.

Oil and Grease:

4.3.2.4 Oil and Grease/MTBE
The Basin Plan contains one Water Quality Objective for Oil and Grease, which states:
Water shall not contain oils, greases, waxes or other material in concentrations that cause nuisance, result in visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
Oils, greases, waxes or other material that can result in a visible film or coating of material in water can be measured as oil and grease (mg/l), gasoline range organics (mg/l), Methyl-t-butyl ether or MTBE (µg/l) and total petroleum hydrocarbons or TPH (µg/l).

The Licensees sampled for oil and grease in all reservoirs during fall turnover and spring sampling periods, and in all reservoirs and stream reaches in the summer. Although, sampling from the reservoir hypolimnia was excluded for oil and grease; as requested by the SWRCB, the

hypolimnion was sampled for MTBE. During the sampling events, no evidence of surface sheens that might indicate the presence of oil or grease was observed. All 136 samples analyzed by the Licensees were below the reporting limit of 5 mg/l for oil and grease (Table 4.2.3-3).

Table 4.3.2-3. Summary of Selected Organic Compounds, UARP and Chili Bar, 2002-2003.

Reservoir & Stream	Oil & Grease (mg/l)	MTBE (µg/l)	Gasoline Range Organics (mg/l)	Total Petroleum Hydrocarbons (µg/l)
Number of Samples	136	84	70	14
Percent of Samples Below Reporting Limit	100%	100%	100%	100%
Reporting Limit	<5	<0.5	<0.05	<1

During the fall and spring sampling, the Licensees sampled MTBE from reservoirs on which the use of boat engines is permitted. These included Loon Lake, Union Valley, Ice House and Slab Creek reservoirs. During the summer low flow sampling, the Licensees obtained samples for MTBE from all sampling-sites (reservoir and stream reaches). All 84 samples analyzed by the Licensees were below the reporting limit of <0.5 µg/l for MTBE (Table 4.3.2-3). For comparison, present water quality goals for drinking water (primary maximum contaminant limit) is 13 µg/l (SWRCB 2003).

Total petroleum hydrocarbons were sampled at all reservoir-sites with boat use during the fall turnover and spring sampling events. Gasoline Range Organics were sampled at all sites during the summer sampling. All samples for both parameters were below the reporting limit set at 1.0 µg/l for TPH and 0.05 mg/l for Gasoline Range Organics (Table 4.3.2-3).

Conflicting assessments from the same Author:

Please note that both ungraded and rocked roads, which the Rubicon IS, show very low sediment production results. This is in direct conflict with the Agency's Assessment of Sediment Delivery from the Rubicon Jeep Trail.

There is an existing Central Sierra Nevada model by Mr. MacDonald AND by Mr. Coe:

http://www.fs.fed.us/psw/publications/documents/psw_gtr193/psw_gtr193_4_05_MacDonald_Coe_Lit.pdf
http://www.cosis.net/abstracts/EGU05/08831/EGU05-J-08831.pdf

Assessing Cumulative Watershed Effects in the
Central Sierra Nevada: Hillslope Measurements
Catchment-Scale Modeling
MacDonald, Coe, Litschert

"Development and use of more physically based models to predict CWEs in the Sierra Nevada are severely hindered by the lack of primary data to predict site-scale changes in runoff and erosion."

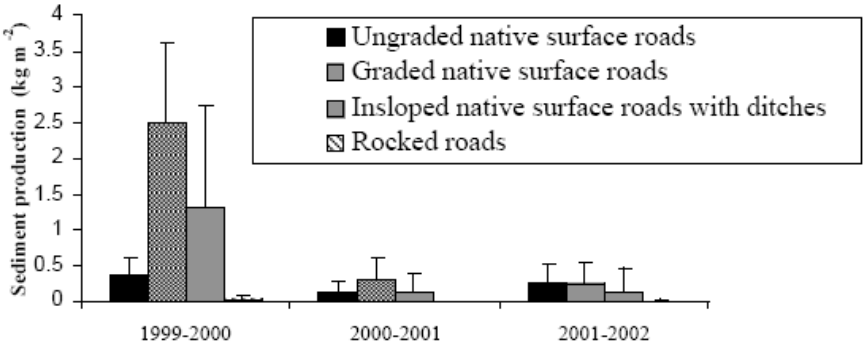


Figure 4— Magnitude and interannual variability in sediment production rates for various road drainage types and surfaces. Bars represent one standard deviation.

Declines in sediment production rates in the second and third seasons for the other land uses can be generally attributed to differences in magnitude and type of precipitation. Total precipitation in the first wet season was very close to the long-term mean but only 70 percent and 83 percent of normal in the second and third wet seasons, respectively. Perhaps more importantly, storms in the second and third wet seasons generally were colder than in the first wet season, so more of the precipitation fell as snow. Hence, rainfall erosivity in the second and third wet seasons was only 440 MJ mm ha–1 hr–1, or slightly more than half of the erosivity in the first wet season and only about 40 percent of the long-term mean. The larger and more persistent snowpack at most of the sediment fence sites apparently protected surfaces from rain splash erosion and may also have slowed overland flow.

"Conclusions
Cumulative watershed effects are an important concern of resource managers, and both state and Federal laws require assessment of CWEs. There is a need for improved models to more explicitly assess changes in flow and sediment production for forested watersheds in the Sierra Nevada. Current methods are hampered by both the lack of accurate input data based upon field measurements and the absence of spatially explicit, user-friendly models"

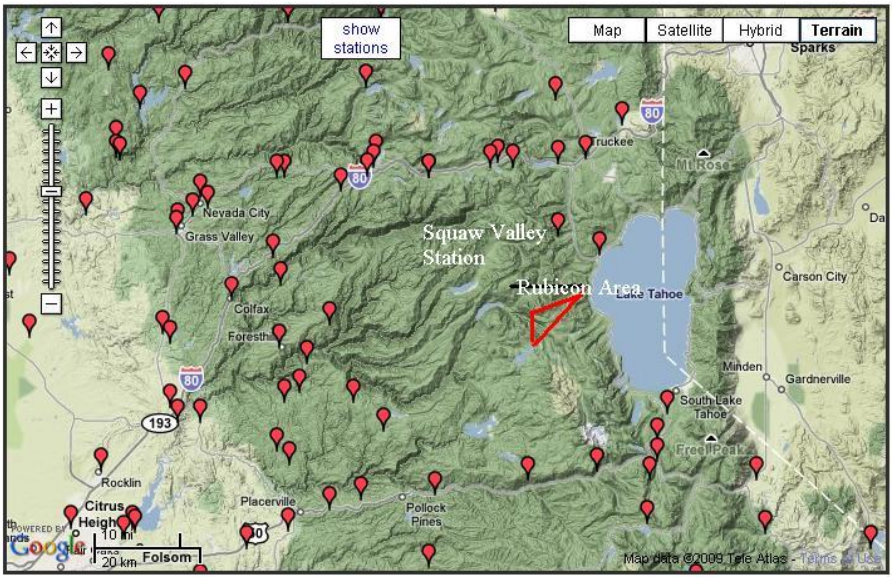
Agency's Sedimentation Model

Eb is related to the erodibility of the trail surface, trail gradient, and the force applied to the trail surface by rainfall, overland flow, etc. Eb can be relatively small when the trail surface is consolidated and/or armored because the trail surface can be resistant to the erosive forces of rain splash, sheet wash, or rill erosion. However, Eb can be a substantial portion of total erosion when gullying, rutting, or extreme precipitation events occur (Ziegler et al., 2001) (Figure 1).

We can assume the Rubicon receives only 51 inches of rainfall per year and over 246 inches of snowfall per year (NOAA). Actual rainfall events producing sediment to stream channels is very low. The author continues the explanation for sediment depth, but does not explain rainfall forces except to compare the amount to those used by Ziegler in a Thailand rain forest, versus the Rubicon trail which is far less, and does not get monsoonal rain events.

Lets look at some actual rainfall Data: NOAA Weather Data - http://www.wrcc.dri.edu/coopmap/
Below is the discussion for choosing the Squaw Valley Station

Western US COOP Station Map



1) it is the closest station to the Rubicon Trail which will be the most accurate in storm events potentially effecting sediment delivery
2) It is similar in location, both in elevation and latitude
3) it is a South Slope basin

Here is the actual historical snowfall for a 20 year time period 1955-1975

SQUAW VALLEY LODGE, CALIFORNIA (048474)

Period of Record Monthly Climate Summary

Period of Record : 10/13/1955 to 10/31/1975

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	39.5	41.9	44.6	50.8	61.6	71.7	80.1	79.1	72.1	61.4	48.5	41.0	57.7
Average Min. Temperature (F)	14.6	15.8	20.3	23.9	30.9	37.5	42.1	41.3	35.5	27.7	22.4	15.3	27.3
Average Total Precipitation (in.)	9.74	7.64	6.58	3.44	1.62	1.15	0.67	0.83	0.91	2.84	6.58	9.01	51.02
Average Total SnowFall (in.)	54.9	49.8	36.4	21.8	7.8	0.3	0.0	0.0	0.6	4.3	23.9	46.9	246.6
Average Snow Depth (in.)	33	44	40	21	3	0	0	0	0	0	4	19	14

Percent of possible observations for period of record.
Max. Temp.: 90.1% Min. Temp.: 90.3% Precipitation: 91.3% Snowfall: 85.5% Snow Depth: 83.9%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

In looking at this chart, it is obvious that the rain falls either on snow pack, or in a rain snow mix. Less than 4 inches of rain falls in the 4 months of below freezing low temperatures.

It is difficult to imagine that 100 cubic yards of sediment is washed into the waters of the state, with 4 inches of rain over a 4 month period.

It also shows that the sediment models used by the Agency in the Assessment of Sediment Delivery on the Rubicon Jeep Trail are highly inflammatory, and at the very least unreliable. As they say...garbage in, garbage out. Assuming Sediment loads of 100 cubic yards per year I am confident would have been shockingly apparent in the above Sediment testing

samples AND would have been much higher than LESS THAN 1 MILLIGRAM PER LITER.

Review of Assessment and issues discussed in the Draft CAO:

Sediment:

The above mentioned research performed by SMUD shows that sediment on the Rubicon is not affecting the Waters of the State.

Fecal Coliform and E *coli*:

The above mentioned research performed by SMUD shows that fecal coliform and E.*coli* on the Rubicon is not affecting the Waters of the State.

Oil and Grease:

The above mentioned research performed by SMUD shows that oil and grease (organic compounds) on the Rubicon is not affecting the Waters of the State.

RTMP:

El Dorado County is affecting change on the Rubicon in conjunction with Friends of the Rubicon and the Rubicon Trail Foundation. Projects mentioned in other stakeholders comments show a willingness to improve conditions on the trail. RTF, FOTR and El Dorado County are committed to continuing to improve the trail. I personally do not believe that the Central Valley Water Quality Control Board needs to produce a CAO for the Rubicon Trail. Many issues brought up in the CAO have been completed, or are planned to be completed.

Winter closure:

The data above shows that the waters of the state are not being affected by Winter use of the road. Water quality is not being affected.

Permitted Use:

Closing or limiting use on the trail is not necessary, nor is there a legal means to do so. In other comments it has been determined that El Dorado County, the State, and the Federal Government, do not have the legal ability to regulate, close or make requirements of users to limit their use of the road.

Overuse:

Based on a census count done over the four-day Fourth of July holiday in 2005, the 35,000 figure has been incorporated into official documentation. That count registered 372 vehicles with an average occupancy of 1.78 people per vehicle. The numbers were then multiplied out and applied to the whole year. This is an incredible overstatement of use. By my math and experience on the trail, both on busy holiday weekends, and on a regular summer weekend, which there may be a total of 16 (32 days), I would estimate a use of 5-6000 vehicles annually. Friends of the Rubicon is committed to getting an accurate census this summer.

Conclusion

It seems as though many aspects of the 4 wheel drive sport are shocking to those who are not involved, much like racing, competitions and the like. It may seem spectacular on many levels until you live it and learn it, then it is just a way of life for us.

Facts are facts, and the facts presented here do not support the statements and opinions of Mr. Platt, Mr. Hendricks, and Ms. Schambach. Their comments regarding the affects or potential effects toe the Waters of the State are invalid, and with the facts and figures from SMUD and El Dorado County's' Water quality report; Water Quality Conditions in Eldorado County
show their complaints are nothing more than conjecture. For over 5 years we have lived in a constant state of fear that we

may be losing our beloved Rubicon.

I do not deny there are issues, but they can be mitigated, and we take them seriously. We work all summer long and accomplish as much as we can, and look forward to doing more. But we are always told it is not enough, it is out of our professional ability, that we are inadequate as a group by Mr. Platt, Mr. Hendricks, and Ms. Schambach. None of this is true, and I don't believe the CVWQCB's involvement is necessary or warranted.

It is time to start using transparent data, as provided above. Testing and actual results are the only application of science appropriate when it comes to affecting the "Human Environment". Peoples lives, livelihoods and inalienable rights are potentially affected by the slander, exaggeration, misrepresentation, and personal attacks. Such things have no place in science or the law. It is a huge waste of the Agency's time, the County's time, the publics time and our tax dollars.

I look forward putting this behind us.

Sincerely,

Jacquelyne Theisen